

MOVEMENT ADJUST DEVICE FOR A CIRCULAR SAW

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a movement adjust device, and more particularly to a movement adjust device for a circular saw. The movement adjust device of the present invention can reduce the necessary operating space of the circular saw.

2. Description of Related Art

A circular saw is widely used for cutting. The circular saw without any movement adjust device only has a short cutting range. As a result, a conventional movement adjust device is provided to overcome the problem of the circular saw. The conventional movement adjust device in accordance with the prior art comprises a holder secured on a rear end of a base member of the circular saw. The holder has two through holes defined to allow two guide bars slidably extending through the holder. Each guide bar has a first end securely received in a first stopper and a second end securely received in a second stopper that is securely mounted to a hinge that is connected to a housing, a motor and a saw blade of the circular saw. Consequently, the saw blade can be moved to elongate the cutting range of the circular saw due to a slidable relation between the holder and the two guide bars.

However, the guide bars extend from the rear portion of the circular saw when the circular saw only needs a short cutting range and the second stopper is backward pushed. Consequently, the conventional

1 movement adjust device needs an operating space having a depth
2 corresponding to the length of the guide bars. It is a inconvenient design
3 when used in a small place.

4 The present invention has arisen to mitigate and/or obviate the
5 disadvantages of the conventional movement adjust device for a circular
6 saw.

7 SUMMARY OF THE INVENTION

8 The main objective of the present invention is to provide an
9 improved movement adjust device of a circular saw. The movement adjust
10 device of the present invention can reduce the necessary operating space
11 of the circular saw.

12 To achieve the objective, the movement adjust device for a circular
13 saw in accordance with the present invention comprises a holder secured
14 on a base member of the circular saw and having two through holes
15 defined in tow opposite ends the holder. Two first guide bars each slidably
16 extends through a corresponding through hole in the holder. Each first
17 guide bar has a first end securely received in a first stopper to prevent the
18 two guide bars from detaching from the holder and a second end securely
19 received in a connector in which two through holes is defined between the
20 second end of each of the two first guide bars. Two second guide bars each
21 slidably extend through a corresponding through hole in the connector.
22 Each second guide bar has a first end securely received in a second stopper
23 to prevent the two second guide bars from detaching from the connector
24 and a second end securely received in a third stopper that is secured on a

1 hinge of the circular saw.

2 Further benefits and advantages of the present invention will
3 become apparent after a careful reading of the detailed description with
4 appropriate reference to the accompanying drawings.

5 BRIEF DESCRIPTION OF THE DRAWINGS

6 Fig. 1 is a side schematic plan view in partial cross-section of a
7 movement adjust device for a circular saw in accordance with the present
8 invention;

9 Fig. 2 is a top plan schematic view of the movement adjust device
10 in Fig. 1;

11 Fig. 3 is a partially perspective view of the movement adjust
12 device in Fig. 1;

13 Fig. 4 is a partially perspective view of the movement adjust
14 device in Fig. 1;

15 Fig. 5 is a cross-sectional view of the movement adjust device in
16 Fig. 2 along line x-x;

17 Fig. 6 is an operational side plan view of the movement adjust
18 device in Fig. 1;

19 Fig. 7 is an operational side plan view of the movement adjust
20 device in Fig. 1;

21 Fig. 8 is an operational top plan view of the movement adjust
22 device in Fig. 7;

23 Fig. 9 is a side schematic plan view of a second embodiment of a
24 movement adjust device for a circular saw in accordance with the present

1 invention;

2 Fig. 10 is a top schematic plan view of the movement adjust device
3 in Fig. 9;

4 Fig. 11 is a partially exploded perspective view of the movement
5 adjust device in Fig. 9; and

6 Fig. 12 is a cross-sectional view of the movement adjust device in
7 Fig. 10 along line y-y;

8 DETAILED DESCRIPTION OF THE INVENTION

9 With reference to the drawings and initially to Figs. 1-5, a
10 movement adjust device for a circular saw in accordance with the present
11 invention comprises a holder (10) adapted to be secured on a rear end of a
12 base member (A) of the circular saw. The holder (10) has two through
13 holes (11) defined in two opposite ends of a top portion of the holder (10).
14 Two first guide bars (12) each slidably extends through a corresponding
15 one of the two through hole (11) in the holder (10). Each first guide bar (12)
16 has a first end securely received in a first stopper (13) to prevent the two
17 first guide bars (12) from detaching from the holder (10) and a second end
18 securely received in a connector (14). The connector (14) has two through
19 holes (141) defined therein between the second ends of the two first guide
20 bars (12). Two second guide bars (15) each slidably extends through a
21 corresponding one of the two through holes (141) in the connector (14).
22 Each second guide bar (15) has a first end corresponding to the first end of
23 each of the two first guide bars (12) and securely received in a second
24 stopper (16) to prevent the two second guide bars (15) from detaching

1 from the connector (14), and a second end securely received in a third
2 stopper (17). The third stopper (17) is adapted to be secured on a hinge (B)
3 to which a motor and a saw blade of the circular saw are mounted.

4 With reference to Figs. 6, the operator can pull the housing of the
5 circular saw and the first guide bars (12) and the second guide bars (15)
6 extend toward the operator when the workpiece has a great size or needs a
7 long distance cutting. With reference to Figs. 7 and 8, in the preferred
8 embodiment of the present invention, the friction force between the
9 second guide bars (15) and the connector (14) is smaller than that between
10 the first guide bars (12) and the holder (10). Consequently, the second
11 guide bars (15) extend toward the operator when the operator pulls the
12 housing of the circular saw. The first guide bars (12) extend toward the
13 operator when the operator continually pulls the housing to make the
14 second stopper (16) abut and drive the connector (14) to pull the first guide
15 bars (12) toward the operator because the second end of each of the two
16 first guide bars (12) is securely received in the connector (14). The first
17 stopper (13) can prevent the two first guide bars (12) from detaching from
18 the holder (10).

19 As described above, the guide bars of conventional movement
20 adjust device is divided into two portions respectively corresponding to
21 the first guide bars and the second guide bars. Consequently, the depth of
22 the operating space is shortened because first guide bars (12) and the
23 second guide bars (15) are telescopically moved relative to each other.
24 Furthermore, the number of guide bar of the present invention is double to

1 the conventional movement adjust device such that the present invention
2 can provide a stable support to the circular saw when the first guide bars
3 (12) and the second guide bars (15) extend for a long distance cutting of
4 the circular saw.

5 With reference to Figs. 9-12 that show a second embodiment of the
6 movement adjust device for a circular saw, in the embodiment, the holder
7 (10) has a first channel (101) defined in the top portion thereof between the
8 two through holes (11) and the two second guide bars (15) pass through
9 the first channel (101) in the holder (10). The first stopper (13) has a
10 second channel (131) defined in a top portion thereof for selectively
11 partially receiving the second stopper (16). The second stopper (16)
12 flushes with the top portion of the first stopper (13) when received in the
13 second channel (131) in the first stopper (13). The connector (14) has a
14 protrusion (142) extending therefrom toward the holder (10). The
15 protrusion (142) of the connector (14) is selectively received in the first
16 channel (101) in the holder (10) and flushed with the top portion of the
17 holder (10). The two through holes (141) in the connector (14)
18 horizontally correspond to the two first guide bars (12). Consequently, the
19 connector (14) and the holder (10) look like a one-piece element when the
20 protrusion (142) of the connector (14) is received in the first channel (101)
21 in the top portion of the holder (10). As a result, the height of the
22 movement adjust device of the present invention is the same as the
23 conventional movement adjust device, but has better structure than that of
24 the conventional movement adjust device.

1 Although the invention has been explained in relation to its
2 preferred embodiment, it is to be understood that many other possible
3 modifications and variations can be made without departing from the spirit
4 and scope of the invention as hereinafter claimed.